AMENDMENTS TO THE CLAIMS

1-11 (canceled).

12. (original) An isolated nucleic acid molecule comprising a nucleic acid sequence encoding a protein having glycosyl hydrolase activity, wherein the nucleic acid sequence is selected from the group consisting of

(a) a nucleic acid sequence that is SEQ ID NO: 5;

(b) a nucleic acid sequence encoding a protein comprising the amino acid sequence of SEQ ID NO: 6;

(c) a nucleic acid sequence that is SEQ ID NO: 7;

(d) a nucleic acid sequence encoding a protein comprising the amino acid sequence of SEQ ID NO: 8; and (e) a nucleic acid sequence that is degenerate as a result of the genetic code to the nucleic acid sequence of (a), (b), (c) or (d).

13. (original) An isolated nucleic acid molecule according to claim 12, wherein the glycosyl hydrolase has a hydrophobic cluster analysis (HCA) score with the kappa-carrageenase of *Alteromonas carrageenovora* which is greater than or equal to 75% over the domain extending between amino acids 117 and 262 of the amino acid sequence of *Alteromonas carrageenovora* that is SEQ ID NO: 6.

14. (original) An isolated nucleic acid molecule according to claim 13, wherein the HCA score is greater than or equal to 80%.

15. (original) An isolated nucleic acid molecule according to claim 13, wherein the HCA score is greater than or equal to 85%.

16. (original) A vector comprising a nucleic acid molecule according to claim 12.

LAW OFFICES
DENNISON, SCHULTZ & DOUGHERTY
612 CRYSTAL SQUARE 4
1745 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VIRGINIA 22202-3417
703 412-1155

17. (original) A host cell genetically modified with a nucleic acid molecule according to claim 12 or with a vector comprising said nucleic acid molecule.

18. (original) A method of producing a protein having glycosyl hydrolase activity, the method comprising:

(a) obtaining the host cell of claim 17; and

(b) growing the host cell under conditions and for a time sufficient to produce the protein.

19. (new) A method of producing kappa-oligocarageenans, comprising

(a) genetically modifying a host cell with a nucleic acid molecule having SEQ ID NO: 5, or with a vector comprising a nucleic acid molecule having SEQ ID NO: 5;

(b) culturing the host cell until a protein having glycosyl hydrolase activity is produced;

(c) isolating the protein having glycosyl hydrolase activity;

(d) contacting the isolated protein having glycosyl hydrolase activity with a carrageenan until kapp-oligocarrageenans are produced; and

(e) recovering the kappa-oligocarrageenans.

20. (new) A method of producing kappa-oligocarageenans, comprising

(a) genetically modifying a host cell with a nucleic acid molecule having SEQ ID NO: 7, or with a vector comprising a nucleic acid molecule having SEQ ID NO: 7;

(b) culturing the host cell until a protein having glycosyl hydrolase activity is produced;

(c) isolating the protein having glycosyl hydrolase activity;

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(d) contacting the isolated protein having glycosyl hydrolase activity with a carrageenan until kapp-oligocarrageenans are produced; and

(e) recovering the kappa-oligocarrageenans.

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703 412-1155